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IS 11078 (2012): Round Open Top Sanitary Cans for Milk Powder - Specification [MTD 32: Metal Containers]

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(दूसरा पुनरीक्षण)

Indian Standard

ROUND OPEN TOP SANITARY CANS FOR MILK POWDER — SPECIFICATION

(Second Revision)

ICS 55.120;67.100.10

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

September 2012 **Price Group 2**

Metal Containers Sectional Committee, MTD 32

FOREWORD

The Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Metal Containers Sectional Committee had been approved by the Metallurgical Engineering Division Council.

This standard was first published in 1984 and subsequently revised in 1993 covering 200 g, 400 g, 500 g, 1 kg and 2 kg tins for packing baby food or milk powder. The Committee felt to revise this standard in the light of developments in the tin manufacturing practices and the experience gained by the dairy industry by the use of these tins. In this revision following modifications have been carried out:

a) Scope has been modified to include 2.5 kg tins;
b) Table 1 has been modified to include 2.5 kg tins;
c) Clause **4.2** has been modified by permitting the tins with welded side seam with suitable protective side stripe system. Provision of soldered side seam in the tins manufacture has been deleted;
d) Requirements of solder have been deleted; and
e) Clause on the external finish has been modified.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

ROUND OPEN TOP SANITARY CANS FOR MILK POWDER — SPECIFICATION

(Second Revision)

1 SCOPE

This standard prescribes the requirements of round metal cans for packing of milk powder, baby food or infant milk food powders in skimmed or whole form in quantities of 200 g, 400 g, 500 g, 1 kg, 2 kg and 2.5 kg.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of the publication, the editions indicated were valid. All standards are subject to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
1394 : 1984	Glossary of terms relating to metal containers (*third revision*)
1993 : 2006/ ISO 11949 : 1995	Cold-reduced electrolytic tinplate (*fourth revision*)
3259 : 1966	Methods for sampling of metal containers
9396 (Part 1) : 1987	Specification for round open top sanitary cans for foods and drinks: Part 1 Tinplate (*first revision*)
11104 : 1984	Glossary of terms relating to open top sanitary cans
12219 : 1987	Methods of determination of gross-lidded capacity of open top sanitary cans

3 TERMINOLOGY

For the purpose of this standard, the terms given in IS 1993, IS 11104 and the following shall apply.

3.1 Open Top Sanitary Cans (OTS) — A rigid metal container which can be hermetically sealed for packing of thermally and non-thermally processed food and drinks like fruit and vegetable products, synthetic beverages, meat and fish products, dairy products, instant coffee, instant tea, etc.

3.2 Punch Plug Diameter — The precise punch plug diameter of the tool used to produce the end components (*see* Fig. 1) of the can, measured to two decimal places of a millimetre.

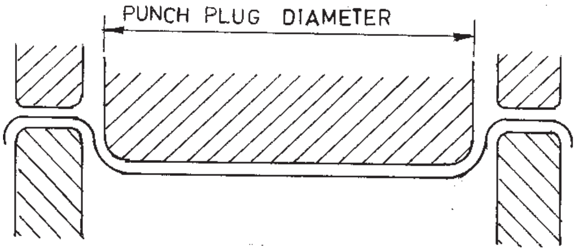

FIG. 1 PUNCH PLUG ON END COMPONENT

4 REQUIREMENTS

4.1 Dimensions and Capacities

The cans shall be manufactured to the dimensions and gross lidded capacities, given in Table 1. Gross lidded capacity shall be measured as per IS 12219.

4.2 Manufacture

4.2.1 Each component shall be made from a single piece of tinplate conforming to IS 9396 (Part 1). Tin free steel may also be used with suitable internal lacquer and with external painting or lacquering.

4.2.1.1 Tinplate thickness shall be as specified in Table 1. Lower thickness of plate may be used, if agreed to between the supplier and the purchaser. The tolerance on thickness shall be as per IS 1993.

4.2.1.2 Tin coating shall be E 2.8/2.8 both for body and ends in the case of tinplate.

4.2.1.3 Aluminium tagger of 0.05 mm nominal thickness shall be used for cans up to 130 mm diameter. For larger diameter cans aluminium tagger thickness shall be 0.064 mm nominal.

NOTE — Higher thickness of aluminium tagger may be used, if agreed to between the purchaser and the supplier.

4.2.2 *Side Seam*

The side seam shall be welded as shown in Fig. 2.

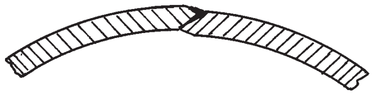

FIG. 2 WELDED JOINT

The welded seam shall be externally coated with a suitable side stripe system to prevent it from rusting. However internal side seam may be plain or coated.

NOTE — Superwima and wima type welding with maximum pre-weld overlap of 0.4 to 0.8 mm respectively are recommended for the welding of side seam.

4.2.3 The ends shall be lined with a suitable lining compound and double seamed as shown in Fig. 3. The lining compound used shall be non-toxic, compatible with the product packed, shall not impart off flavour and shall be resistant to the processing conditions.

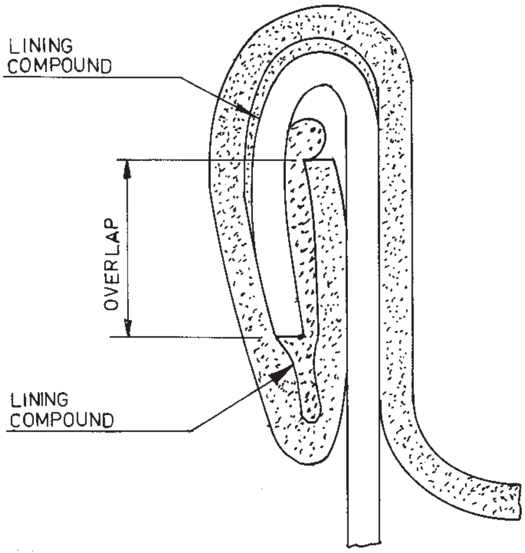

FIG. 3 DOUBLE SEAM WITH LINING COMPOUND

4.2.4 The cans shall be new and in clean condition inside and outside.

4.2.5 *End Components*

4.2.5.1 *Top*

It shall consist of ring, under tagger and full lever lid, all assembled together as shown in Fig. 4.

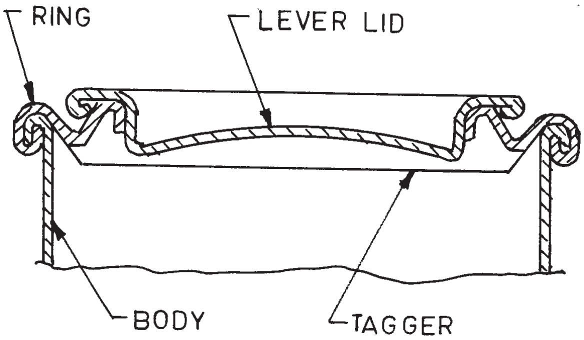

FIG. 4 ASSEMBLY OF TOP

4.2.5.2 For the cans for nitrogen flushed milk powder the bottom shall be clinched to allow for air gap for air to be drawn out from the head space of the cans after filling. The head space is then filled with nitrogen. The cans with such clinched bottoms are subsequently seamed on a seamer to make the seam air-tight. Flushing the head space with nitrogen in such cans may also be done by seaming special bottoms with brogue holes. After seaming, the air in the head space of the can is removed through the brogue hole and nitrogen gas is introduced from the same hole. The hole is then sealed by soldering. For milk powders not requiring any head space for nitrogen flushing, the cans shall be seamed with standard bottom after they are filled.

4.3 Internal Finish

The internal surface of the can shall be plain.

4.4 External Finish

The outside surface of the can shall be lacquered or lithographed or plain. If the treatment is done during can fabrication, it shall be resistant to the processing conditions.

4.5 Air Pressure Test

The tin (without its loose closure component) shall be capable of withstanding, without leakage, a minimum internal air-pressure of 15 kPa tested under water for 15 s.

5 SAMPLING AND INSPECTION

5.1 Representing samples for the lot inspection shall be drawn in accordance with IS 3259.

5.2 The scale of sampling and permissible number of defectives for visual characteristics and air pressure test shall be in accordance with Table 1 of IS 3259.

6 MARKING

The cans may be marked with the indication of source of manufacture.

6.1 BIS Certification Marking

The cans may also be marked with the Standard Mark.

6.1.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Table 1 Dimensions, Capacities and Tinplate Thickness for Round OTS Cans for Milk Powder

(*Clauses* 4.1 *and* 4.2.1.1)

Sl No.	Pack	Trade Size	Over Seam Dimensions		Nominal Diameter	Internal Diameter	Gross Lidded Capacity	Nominal Tinplate Thickness			Lid
								Body		Top-Ring	
			D ±0.2 mm	H ±0.5 mm	mm	(ID ± 0.2) mm	ml	Unbeaded mm	Beaded mm	Bottom ends mm	mm
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
i)	200 g	300 × 406	76	111	73	72.8	430 ± 10	0.19 } or 0.17 DR	—	0.19 } or 0.17 DR	0.19 } or 0.17 DR
		300 × 411	76	119	73	72.8	458 ± 11	0.19		0.19	0.19
ii)	400 g	401 × 408	102	114	99	98.9	802 ± 16	0.20	0.19 } or 0.17 DR	0.19 } or 0.17 DR	0.19 } or 0.17 DR
		401 × 504	102	133	99	98.9	957 ± 19	0.21	0.19	0.19	0.19
		502 × 501	130	127	127	126.5	1 479 ± 22	0.22	0.20	0.20	0.20
										0.19	
iii)	500 g	401 × 504	102	133	99	98.9	957 ± 19	0.21	0.19 } or 0.17 DR	0.19	0.19 } or 0.17 DR
		401 × 604	102	159	99	98.9	1 152 ± 23	0.21	0.19		0.19
		404 × 412	108	121	105	105.1	968 ± 19	0.21	0.19	0.20	0.19
		404 × 504	108	133	105	105.1	1 079 ± 21	0.21	0.19	0.20	0.19
		404 × 510	108	143	105	105.1	1 162 ± 21	0.21	0.19	0.20	0.20
iv)	1 kg	502 × 605	130	160	127	126.5	1 899 ± 29	0.22	0.20	0.20	0.20
		509 × 502	141	138	138	138.4	1 816 ± 27	0.22	0.20	0.20	0.20
		509 × 601	141	138	138	138.4	2 175 ± 27	0.22	0.20	0.20	0.20
v)	2 kg	700 × 611	178	170	174	174.1	3 819 ± 38	0.24	0.22	0.22	0.22
		700 × 800	178	174	174	174.1	4 683 ± 46	0.26	0.22	0.22	0.22
vi)	2.5 kg	700 × 914	178	250.4	174	174.1	5 944 ± 46	0.24	0.24	0.25	0.24

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Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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